# ASILIDÆ, NEW AND OTHERWISE, FROM THE SOUTH-WEST, WITH A KEY TO THE GENUS STICHOPOGAN

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In this paper two genera of robber flies (Asilidæ) are described as new, three genera are recorded from the United States for the first time, eight new species are described, and notes and descriptions of several other species of interest are given. A key is given to those species of the genus Stichopogon Loew (Neopogon Bezzi)<sup>2</sup> that are found in the United States.

This paper is based on material collected in the last few seasons by D. K. Duncan, of Globe, Ariz., and R. T. Kellogg, of Silver City, N. Mex., to whom I am especially indebted. I am also indebted to the Ohio State Museum, the California Academy of Sciences, the Museum of Comparative Zoology, the University of Kansas, Dr. H. A. Scullen of the Oregon State College, Owen Bryant of Tucson, Ariz., and C. H. Martin, for the loan or gift of specimens. I also wish to express my appreciation to Marston Bates for comparing specimens in the Museum of Comparative Zoology. Unless otherwise noted, the types and paratypes of the new species are in my collection.

## Itolia Wilcox, new genus

This genus is most closely related to Townsendia Williston. It differs from all other genera of the Dasypogoninæ except Townsendia by having only four posterior cells, and from Townsendia by having the third (ordinarily the fourth) posterior cell closed and the front but slightly wider at the vertex than at the antennæ.

Face flat, slightly more prominent at oral margin, slightly diverging below; mystax confined to oral margin. erably excavated; ocellar tubercle large. First and second antennal joints short, not longer than wide; third joint not quite as long as first two joints together, slightly coarctate but widest at base and gradually tapering to apex; style two-jointed, first joint short, two joints together, including minute spine at tip, half as long as third joint. Thorax convex, shining and densely pruinose in part; two rather weak presutural bristles and one

<sup>&</sup>lt;sup>2</sup> I am following Bromley (Ann. Ent. Soc. Am., 27: 79, 90, 98, 1934) in using Stich pogon rather than Neopogon for the American species of this genus.

postalar bristle; scutellum largely shining, with fine hair, no bristles. Pleuræ and coxæ mostly pruinose, with rather long, dense pilosity; hypopleural patch long, crinkly at tip. Abdomen largely pruinose, with shining areas; a lateral row of bristles on first segment; hairs on dorsum short, those on sides somewhat longer. Male genitalia rather prominent, similar to those of *Dioctria*; ovipositor with a circlet of spines at apex. Legs normal; empodium and pulvilli present. Third posterior cell of wings (fig. 1) closed and with a minute petiole which does not reach the wing margin; anal cell similar; anterior cross-vein at about middle of discal cell; fourth vein continuous with costa or wing margin, posterior to this the margin of wing membranous.

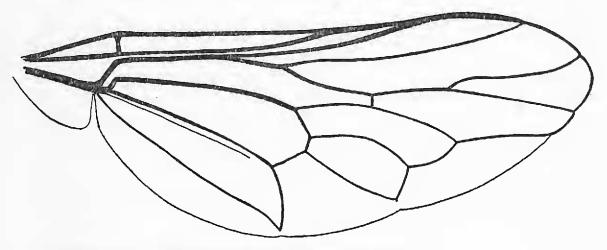


Figure 1.—Wing of *Itolia*, new genus (X10).

Genotype: Itolia maculata Wilcox, new species Named for my wife, Itol Josephine Wilcox, who has collected or helped to collect many species of Asilidæ.

#### Itolia maculata Wilcox, new species

Male: Length 7 mm. Head black, densely pruinose; mystax, weak bristles on ocellar tubercle and upper occiput, and hairs, white. First two antennal joints black clothed with short white hairs; third joint and basal half of style brownish; apical half of style and minute bristle at tip yellowish white.

Thorax shining; part of humeri and postalar calli, a broad central stripe, and a broader lateral stripe on each side truncate in front and narrowly constricted at transverse suture but not completely bisected, black; remainder of mesonotum and pleuræ and coxæ, except lower part of mesosternum, a small spot on metasternum, and anterior half of coxæ, densely pruinose; pruinose areas bearing white hair, which is more abundant on propleura and mesopleura; hypopleural hairs long, erect, white, crinkly at tip. Two weak white presutural bristles and one weaker white postalar bristle. Scutellum shining black, narrowly transversely

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pruinose at base; a few short, fine, whitish hairs apically.

Abdomen shining black in ground color, except very narrow posterior margin of second and third segments, posterior one-third of fourth segment, and fifth to seventh segments, which are largely reddish brown; each segment with a broad, interrupted, pruinose band occupying about posterior two-thirds, narrowly interrupted on second, gradually increasing in width of separation to fifth, where the interval is about equal to one-third the width of the segment; bands on first, sixth, and seventh segments similar to those on fifth. Hairs and bristles white; about six weak lateral bristles on first segment; hairs on sides of first segment long, those on remaining segments short. Venter largely pruinose, white Hypopygium conspicuous, shining, white pilose; hypandrium divided and rather broad, each part about twice as long as broad, somewhat widened apically, basal two-thirds black, apical third reddish; surstyli reddish, about three times as long as broad, equal in length to hypandrium; epandrium black, shorter than the other parts, narrowed apically.

Legs shining; trochanters, basal half of fore and middle femora, and basal two-thirds of hind femora, except narrowly at base, black; remainder of femora, and tibiæ, except tip of hind tibiæ, yellowish red; tarsi brown, except base of hind metatarsi and basal half of other metatarsi, which are yellowish; claws black, narrowly yellowish white at base; pulvilli white; empodium yellowish. Hairs and bristles white. Hind metatarsi equal in length to three following joints; fore and middle metatarsi equal in length to two following joints.

Halteres brown at base, stem light brown, knob yellowish. Alulæ light brown, margin yellowish, fringe white. Wings clear hyaline, veins yellowish; anterior cross vein at middle of discal cell, which is acuminate apically; third vein branching slightly before apex of discal cell.

Female: Length 7.5 mm. Similar to male. Sixth, seventh, and eighth abdominal segments without pollen; eighth segment black; fifth to seventh reddish; spines at tip light brown. and apex of all tibiæ black.

Types: Holotype male and allotype female, Santa Rita Mts., Ariz., June (D. K. Duncan). Paratypes: Two females, Phoenix, Ariz., August (D. K. Duncan) and Florence, Ariz., VI-24-1932 (D. K. Duncan), in the writer's collection; four males, Bill Williams Fork, Ariz., July and August (F. H. Snow), in the Ohio State Museum; two females, San Carlos Lake, Ariz., August (D. K. Duncan) and San Carlos, Ariz., VIII-7-1933 (Parker, Lot 28), in D. K. Duncan's collection.

In the specimens from Bill Williams Fork the abdomen is

largely yellowish red except the sides of the first and second segments, which are brown, and the legs, except the knees, which are dark brown or black.

## ARCHILESTRIS MAGNIFICUS (Walker)

This large, truly magnificant species is here reported from the United States for the first time. A female was collected by D. K. Duncan at El Oro Mine, Baboquivari Mts., Ariz., elevation 4,000 feet, VIII-17-1932. S. W. Bromley has informed me that he has seen specimens from Arizona in the collection of the California Academy of Sciences<sup>3</sup>. As this species is described by Back<sup>4</sup>, no further comments are needed.

### Eucyrtopogon limpidipennis Wilcox, new species

Male: Length 6.5 mm. Black; cheeks, palpi, and proboscis shining; face and front densely covered with gray pollen; front and vertex with a brownish tinge, especially on the front above the antennæ. Mystax black; hairs above mouth white; a row of fine erect black hairs on sides of front; about six long black bristle-like hairs on ocellar tubercle together with some shorter black hairs; all but one of occipital bristles yellowish; beard and hairs of palpi and proboscis white. Antennæ black, thinly coated with gray pollen; first joint about one and one-half times as long as second, both with fine white hairs, the first with three and the second with one strong black bristle below; third joint slightly tapering apically, one and one-fourth times as long as first two joints together; style two-jointed, acute apically, nearly as long as third joint.

Thorax largely covered with gray pollen, with a well-defined geminate central brown stripe and a broader intermediate stripe bisected by the transverse suture, brown. Hairs rather long, black; bristles black, two or three presutural, one supra-alar, and one postalar. Scutellum covered with yellowish gray pollen, with fine white hairs on the disc, posterior margin bearing six long, black, bristle-like hairs. Pleuræ, except mesopleura, which is pollinose, covered with gray pollen and white pilose; hypopleural hairs long, crinkly at tip, all white, except three to five of the hairs, which are brownish.

Abdomen bluish black, shining; with gray pollen as follows: First segment at sides; anterior and posterior corners and a narrow anterior transverse band divided at middle and not reaching

<sup>&</sup>lt;sup>3</sup> These specimens have been seen since the above was written. The data are as follows: Baboquivari Mts., Ariz., VIII-15-1922, IX-1-1923, IX-15-1924, and X-1924 (O. C. Poling), presented by C. L. Fox; and Chiricahua Mts., Tex Canyon, Cochise County, Ariz., elevation 6,000 feet, IX-13-1927 (J A. Kusche).

<sup>4</sup> Trans. Am. Ent. Soc., 35: 216-217. 1909.

lateral margins on second; third to fifth with posterior corners and anterior transverse band as on second; the sides, broader apically, and narrowly confluent with anterior band at sides on sixth; and the seventh entirely. Hairs and bristles white; about five lateral bristle-like hairs on first segment; hairs on sides rather long on dorsum short and sparse. Venter uniformly covered with gray pollen and white pilose. Hypopygium short, black, shining, with white and golden pile.

Legs black, hairs white, bristles golden brown; claws black; pulvilli brown; empodium reddish brown.

Alulæ brown, margin yellowish, fringe whitish. Base and lower stem of halteres brown, upper stem blackish brown, knob winered. Wings hyaline, villi very small and inconspicuous, faintly brown at base of fifth posterior cell, on anterior cross-vein, at fork of third vein, and on discal cross-vein. Veins brown, anterior cross-vein at apical two-thirds of discal cell; third vein branching slightly beyond discal cross-vein.

Female: Length 7.5 mm. Mystax entirely black. Anterior band of pollen on third and fourth, abdominal segments narrowly connected at middle, and on sixth segment nearly obliterated, absent on seventh with the posterior spots faint; eighth segment entirely black; spines brown at tip. Branch of third vein in one wing having a stump of a vein slightly longer than anterior crossvein.

Holotype: Male, Grant County, N. Mex., XI-19-1932 (R. T. Kellogg). Allotype: Female, same data. Paratypes: 12 specimens, both sexes, same data as type; and 11 specimens, both sexes, Silver City, N. Mex., X-28-1933 (R. T. Kellogg).

This small species is at once distinguished from all the other described forms by the anterior bands of pollen on the abdomen.

# Eucyrtopogon kelloggi Wilcox, new species

Male: Length 9 mm. Head black; face thinly and occiput densely covered with gray pollen; front and ocellar tubercle thinly covered with brown pollen; mystax black, some of lower hairs white at tip; the rather long hairs along sides of front, numerous long bristle-like hairs on ocellar tubercle, and occipital bristles, black; beard, fine hairs on upper occiput, proboscis, and palpi, white. Antennæ black, thinly pollinose; first joint one and one-fourth times as long as second and both joints wider than third, which is widest at base, nearly parallel-sided from basal one-fourth to apex and one and one-third times as long as first two joints together; style slightly more than one-half as long as third joint; first two joints with numerous yellowish hairs, on anterior side the first joint bearing one strong and two slender, and the second one slender and two strong, black bristles.

Mesonotum brown, the central stripe shining and divided anteriorly by a narrow line of golden brown pollen; intermediate stripes thinly golden brown, abruptly broadened inwardly before transverse suture; remainder of mesonotum covered with gray pollen with a touch of brown when viewed at some angles. Numerous hairs black; bristles black, four presutural, two supra-alar, and three postalar. Scutellum shining brown on disc, marginally with gray pollen, with numerous silky white hairs and 10 long black marginal bristles. Pleuræ thinly covered with brownish and grayish pollen, hairs white; hypopleural hairs long, crinkly at tip, one-half black and one-half white, the white ones mostly posterior.

Abdomen shining blue-black, with posterior margins, broadly interrupted at middle, covered with gray pollen. Hairs on sides long and white, on the dorsum short and black. Genitalia shining black, with numerous moderately long brown hairs.

Legs shining black, knees narrowly brownish; coxæ thinly covered with gray pollen. Hairs white; bristles black, some with white tips; claws and empodium black; pulvilli brownish black.

Alulæ brown with wide yellowish margin and fringe of fine yellowish hairs. Halteres dark brown. Wings unusually long, largely brown villous except costal, basal and anal cells which are largely hyaline; a broad hyaline spot at base of first submarginal cell extending through first basal cell and very narrowly into discal cell; and a narrow hyaline spot in second submarginal cell extending through first posterior cell and into second; brown villosity slightly darker on cross-veins and furcations; veins brown. All posterior cells broadly open; anterior cross-vein at about two-thirds distance from base of discal cell; third vein branched before discal cross-vein.

Female: Length 11 mm. Similar to male. Seventh and eighth abdominal segments wholly shining black; eight or nine brown spines at tip of ovipositor; hairs of ovipositor short and yellowish.

Holotype: Male, Silver City, N. Mex., XI-5-1932 (R. T. Kellogg). Allotype: Female, same data. Paratypes: 16 specimens, both sexes, same data.

The narrow face distinguishes this from all other species of Eucyrtopogon except limpidipennis and an unnamed species from eastern Oregon, it being but little more than one-half the width of one eye at the antennæ, while all other species seen have the face at least three-fourths the width of one eye. In the unnamed species from Oregon the male costa is fimbriate, which separates both species from it; this species also lacks bristles on the first antennal joint, and the style is nearly as long as the third joint.

## Stichopogon arenicola Wilcox, new species

Male: Length 7 mm. Black; face and occiput densely covered with grayish pollen; front, vertex and ocellar tubercle pollinose, the last two with a brownish tinge; mystax and hairs white, mystax confined to oral margin, fine erect hairs numerous on front; occipital bristles yellowish, five on each side. Antennæ black, thinly covered with grayish pollen; first and second joints with short white hairs; first joint slightly longer and narrower than second; third one and one-half times length of first two together; style two-thirds length of third joint.

Thorax and scutellum black, densely covered with grayish yellow pollen; mesonotum with an indistinct broad black central stripe. Short, fine, white hairs numerous on mesonotum; bristles black, one presutural, one supra-alar, and one or two postalar; scutellum with numerous long white marginal hairs; hypopleural hairs long, about 10 in number, white.

Abdomen black, densely covered with grayish yellow pollen, at some angles the broad sides, somewhat wider anteriorly, appearing more grayish. Hairs white, numerous, long on sides of first segment, short elsewhere except for a few of intermedate length on sides of second segment near base. Genitalia densely covered with grayish yellow pollen and white pilose, narrowly shining dark brown basally.

Legs black; coxæ densely, and the remaining parts rather densely, covered with gray pollen. Hairs white; bristles white except those on last three or four joints of hind tarsi, which are black; claws black, broadly dark reddish basally; pulvilli and empodium brownish.

Lower stem of halteres brown, upper stem and knob yellowish white. Wings hyaline, veins brown; fourth posterior cell slightly narrowed apically and with a petiole at base about equal in length to anterior cross-vein; anal cell closed and short petiolate; anterior cross-vein at one-third distance from base of discal cell.

Female: Length 9 mm. Similar to male. Abdomen on sides with yellowish gray pollen, broader anteriorly and narrowly connecting on some segments, remainder with yellowish-brown pollen; eighth segment entirely covered with yellowish-gray pollen; spines at tip of abdomen brown, 12 in number.

Holotype: Male, Gila River Valley, San Carlos, Ariz., elevation 2,700 feet, III-17-1934 (D. K. Duncan). Allotype: Female, same data. Paratypes: 30 specimens, both sexes, same data and III-27-1934, 10 of these in D. K. Duncan's collection. These specimens range from 6.5 to 9 mm. in length.

Most closely related to S. argenteus (Say); differs in that

mystax is confined to oral margin and in the black thoracic bristles and general yellowish color instead of white.

#### STICHOPOGON CATULUS Osten Sacken

Stichopogon catulus Osten Sacken, Biol. Centr.-Am., Dipt., vol. 1, p. 170, 1887.

This species was described from two male specimens collected in northern Sonora, Mexico (Morrison). As Osten Sacken omits a number of the characters used today to separate the species of this genus, both sexes are described.

Male: Length 7 mm. Head densely pruinose; mystax and hairs white; five black occipital bristles on each side. Antennæ black, thinly pruinose; second joint slightly longer than the first, both white pilose; third joint one and one-third times as long as first two joints together; style three-fifths as long as third joint.

Mesonotum subshining black, thinly covered with gray pollen with a suggestion of a broad central, geminate black stripe. Hairs short, erect, longer on sides; on humeri, on mesonotum between humeri, and on lateral margins, white, elsewhere black. Bristles long, black; one presutural, one supra-alar, and one postalar. Scutellum densely pruinose, with numerous fine white marginal hairs about as long as scutellum. Pleuræ and coxæ densely covered with gray pollen, hairs white; about a dozen long white bristles in hypopleural row.

Abdomen black; broad sides extending narrowly across anterior margins of second to fifth segments, sides and broader posterior angles of sixth and seventh segments, eighth segment and genitalia entirely, and first segment except the middle basally, covered with gray pollen. Hairs white on sides and on areas covered with pollen, short and black on black areas. Venter with a longitudinal black shining stripe on segments, increasing in width apically; otherwise covered with gray pollen; hairs white.

Legs black, thinly covered with gray pollen; claws black, reddish basally; pulvilli brown. Hairs white, on posterior side of hind tibiæ and below on tarsi golden; bristles on femora and tibiæ white, on fore and middle tarsi largely white, on hind tarsi black; a pair of bristles on each side at apex of first and second joints of fore tarsi and three bristles on these segments of middle tarsi, very long.

Alulæ largely dark brown with a yellowish margin and fringe. Halteres largely dark brown, part of stem and knob dull yellowish. Wings hyaline, veins brown, anterior cross-vein at basal one-fourth of discal cell.

Female: Length 7.5 mm. Face and front densely covered with

golden pollen; occiput above yellowish gray; mystax yellow. Mesonotum, except humeri and central part of transverse suture, which is gray, thinly covered with golden pollen; a conspicuous, broad, undivided black stripe down the middle. Scutellum and coxæ covered with grayish yellow pollen; pleuræ pollinose. Pollen of abdomen grayish yellow, pattern as in male; pollen on sixth and seventh segments indistinct; eighth segment except anterior angles entirely covered with pollen; hairs on sixth and seventh segments black, on eighth white; about 10 blunt dark brown spines at tip; venter of ovipositor yellowish red.

Described from a male and female collected at Silver City, N. Mex., VI-16-1933 (R. T. Kellogg). Additional specimens with same data as above and V-30-1933; Baboquivari Mts., Ariz., April (D. K. Duncan); and Sabino Canyon, Santa Catalina Mts., Ariz., April (D. K. Duncan).

This species is probably most closely related to *S. argenteus*, from which it differs by the black bristles on the occiput, thorax, and tarsi; the maculate abdomen, and the mystax confined to the oral margin. Some of the specimens are only 4 mm. long.

#### STICHOPOGON FRAGILIS Back

Stichopogon fragilis Back, Trans. Am. Ent. Soc., 35: 334-335, 1909.

This species was described from a single female specimen taken at Alamogordo, N. Mex., April 24, 1902 (H. L. Viereck). Apparently no other specimens have been reported; so the male is described below.

Male: Length 4 mm. Similar to female, with the following differences: Abdomen from some angles entirely pruinose, but viewed posteriorly segments I and VIII wholly pruinose and II to VI pruinose on sides, slightly wider anteriorly; broad dorsum of these segments dull brownish black with narrow posterior borders yellowish. Coxe and femora black or dark brown in ground color, densely covered with gray pollen; tibiæ and tarsi yellowish except last tarsal joint and hind tibiæ apically, which are brownish, thinly covered with gray pollen. Fourth posterior cell slightly narrowed but open at wing margin a distance equal to one and one-half times the length of the anterior cross-vein; petiole of anal cell equal in length to anterior cross-vein.

Described from a male taken in Pinal County, Ariz., elevation 2,200 feet, IV-1-1934 (D. K. Duncan).

Additional specimens of both sexes from same locality and

from Florence Junction, Ariz., IV-7-1934 (D. K. Duncan). These specimens range from 3 to 5 mm. in length.

The majority of the specimens that are in good condition agree as to the color of the legs and abdomen as described above, but there are several in which the abdomen and femora are yellowish, as described by Back. The anal cell is barely closed at the wing margin in some specimens.

### KEY TO THE SPECIES OF Stichopogon Loew

1.  2.	Scutellum with well-developed marginal hairs or bristles
	Occipital bristles white
3.	Tibiæ and tarsi largely yellowish; bristles largely white; sides
	and anterior corners of abdomnal segments pruinose, remainder
	of segments brown, narrowly yellowish apically; length 3-5
	mm. (N. Mex., Ariz.)fragilis Back
•	Legs entirely black4
4.	Tarsal bristles largely black; abdominal segments I, IV, and VIII pruinose, remaining segments largely black except that in the female segment VII is largely white; thoracic hairs and bristles white; length 8-11 mm. (Calif.)coquilletti (Bezzi)
•	Tarsal bristles largely white; abdomen wholly covered with pollen
5.	Thoracic bristles black; mystax confined to oral margin; thorax and abdomen yellowish pollinose; length 6-8 mm. (Ariz.)
•	Thoracic bristles white; mystax more abundant and extending upwards on face somewhat; thorax and abdomen whitish prui-
	nose; length 6-8.5 mm. (Atlantic States, Ill., Mich., Kans., Colo., Calif.?)
6.	Legs black; fourth posterior cell not petiolate at base7
•	Base of the tibiæ reddish; fourth posterior cell at least short
	petiolate at base8
7.	Short hairs of mesonotum largely white; in females segments
	I, VII, and VIII of abdomen and in males segments I and VIII and genitalia almost wholly pruinose, remaining segments
	with transverse blackish spots enclosed by whitish pollen;
	thoracic bristles white; length 9-10 mm. (Utah)salinus (Melander)
,•	Short hairs of mesonotum largely black; segments I, IV, and

- 8. Abdomen largely reddish, anterior and posterior margins of segments 1-4 narrowly pruinose, anterior margin of segments III and IV more prominently so, segments I-IV with sides pruinose; length 6-8 mm. (widespread east of Rocky Mountains) \_\_\_\_\_\_abdominalis Back Abdomen pruinose segments I VII with triangular black spots

#### SAROPOGON ARIDUS Curran

Saropogon aridus Curran, Am. Mus. Novitates No. 425, p. 3, 1930.

This species was described from a single male specimen collected at Black Dike Prospect, Sierritas, Ariz., July 26-29, 1916 (F. E. Lutz). The female is described below.

Female: Length 12 mm. Head black in ground color; mystax, frontal and upper occipital bristles, and beard and hairs of proboscis whitish; hairs on palpi and below on first two antennal joints and ocellar and shorter intermediate bristles on occiput black. First and second antennal joints subequal in length, each about twice as long as broad; third joint one and one-fifth times as long as first two joints together; style very short, hardly more than one-tenth as long as third joint and barely distinguishable from it, rounded apically, concave behind.

Thorax black in ground color, apparently pruinose but greased in this specimen; bristles white. Scutellum black, with two pairs of short marginal bristles about one-third as long as scutellum, two of the three now present are whitish, the other one black. Coxæ pruinose, hairs white; hypopleural bristles partly black and white.

First, basal one-fourth of second, and seventh and eighth abdominal segments, black. the remainder reddish brown; the first segment and the venter, which is black, densely covered with gray pollen; remainder of abdomen shining. Hairs and lateral bristles on first segment whitish; spines at apex brown.

Legs shining black, apical two-thirds of hind femora except tip, reddish brown. Hairs and bristles whitish except on tarsi,

<sup>&</sup>lt;sup>5</sup> Pan-Pac. Ent. 10: 84, 1934.

<sup>&</sup>lt;sup>6</sup> Ann. Ent. Soc. Am. 27: 82, 1934. Couplet 8 taken from Bromley's key.

where they are partly black; claws black, narrowly brownish at base; pulvilli light brown; empodium brownish.

Halteres yellowish red. Wings light brown, darker on anterior third; veins brown; anal and fourth posterior cells narrowly open; anterior cross-vein at five-ninths distance from base of discal cell.

Described from a female taken in Santa Cruz Valley, 11 miles north of Nogales, Ariz., elevation 4,000 feet, VIII-12-1932 (D. K. Duncan).

Also a male and female specimen on hand from the following localities: Male, Huachuca Mts., Ariz., VIII-1-1927 (L. D. Anderson); and female, Santa Rita Mts., Ariz., VII-25-1927 (R. H. Beamer); in the collection of the University of Kansas.

The females of this species could be confused only with females of abbreviatus Johnson. The entirely reddish legs and the black lateral margins of the abdominal segments of abbreviatus, however, should readily separate it from aridus. The bristles on the scutellum are also shorter and more numerous in abbreviatus.

The presence of an antennal style has not been generally used to separate Saropogon from Diogmites (Deromyia auct.). All the species of Saropogon from the United States that I have seen possess an antennal style; in most species it is smaller than the third joint and easily seen, but in abbreviatus and aridus it is of the same size as the third joint and not plainly differentiated from it.

To be concluded in the January, 1937, number.

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